Consumer Division Adjustments - 1997

	***************************************	errore do acomo a rea	DOMESTIC OF STREET	ales estados	Francisco de la comp		Section and the second			3 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -			
		1.768.03	19.8 (5.98	7,859,14	7.261.60	11,217.69	6,211.53	11,833.45	13,638.27	28,209.72	16,776,46	9,382.31	147,571.44
BE	13,597.86 898.49	1,700.03	17,012.70	7,032,14									850,49
CAMB	147.00		443.46		140.69	41,14	178.04	10,632,04	17.73	[4,666.63		216.07	26,482.76
CE	147,00	1.194.86	+0.40	14.20		741.96	8.976.93		130.00		400.36		11,578.33
B.		1, (54.00		- 114.20									0.60
FGE	756.21	1.642.02	410.00	1,474,82	1,257.76	333.07	398,49	1,480.75	1,244.72	213.85	428.24	1,058.40	10,496.34
MB		1,012.02	614.00	1,414.44	1,251								825,40
NE	211.40		01470						963.11	42.74	1,075.07	1,004.99	4,426.16
WME	21.31	1,318.74											0.00
Mus. Elec,	1 2 2 3 4 4 5	7 384 77	21,243,38	9,448,16	8.639.45	12.533.86	15.965.01	23,945.24	16,0(3.13	43,132.96	18,680.13	11,661.77	102,270.92
Tetal	15,622.48	5,323.65	21,215.36	7,440.10	8,000,40	32,357.00	15,7-101						
7.P	1,045.14	345.11	4,236.28	67.74	4,451.50	4,506.74	2,959.76	1,401,77	2,591.02	2,312.38	1,381.44	160.22	23,666.18
80	1,043.14	346.00	665.42	307.00	7,2								
		340.00	(10.9.742										9.44
H.C	121.76	27.03	1,205.50	745.23	1,166,94	779.77	1,818.93	711.48	9,434.22	1,056,47	6,551.10	927.82	25,439.25
BSG	454.63	827.03	729.31	135.00	946.00		1,706.42	203.95		1,514.00			5,235.48
CG			729.31	1,145.73	270.00	1,255,54					36.16	125.8	2,583.33
CCC			224	1,143,73	1,931.64	220.51	1,379.43		114.00	1,765.78	6,366.92	164.97	14,391.27
CGL	1,260.23	128.38	809.41		79.19	220,23	1,017.0				122.00		
		110.25			79.19		141.89						4
							191,42						0.60
NAC						323.42							323.42
Man. Gas						6.845.74	8.206.43	2,317.20	12,139,24	6,649,03	14,677,62	1,378,89	75,410.68
Total	2,760.00	1,756,77	7,675.92	2,401.52	1,602.52	9,813.M	8,200.43	2,111.40	12/123/24	<u> </u>			
							106.00	Y		T	78.19		184.19
WATER**		<u> </u>					106.00				78.19		154.15
Total				<u> </u>			100,00						
		250.07	440	199,39		7,639,93	2,023,33	306.24	131.20	3.61		7,333.11	19,451,41
ATT	1,274.34	250,06	68.20	122.22		7,005.53	3,000						0.90
AOS			<u> </u>							108.00			108.00
נאם								30.44					30.44
LDC			10.10				265.48	30.77	587.69	 		1,048.73	2,265.07
MCI	615.41	L	194,48	53.25		8 734 44	1,365,01	271.40	2.096.08	1,406.15	644,70	3,354,96	21,55441
NYNEX	1,275.98	587.94	1,436.16	1,424.07	2,746.57	2,743.39	283.41	15.00	2,434,00	366.88	406.79	102.01	2,075.49
OTT				200.57	565.99	134.81	253.41	13.00			130.77		125,60
PILARIM	125.00			<u> </u>						 	73.51	101.37	174.89
RCN		1		L				22.00		23,4[68.72
SPR	20.31								2,836.97	1.910.03	1,125.01	14,140,21	48,450.43
Total	3,311.07	838.00	1,798,84	1,\$77.28	3,312.56	H0,51B.13	3,937.23	845.08	2,830.97	1,310,02	1,143.01	[4,140,21]	70,000
TOTAL	21,693.33	7,918.42	30,758.14	13,726.96	20,574.33	29,897.73	28,214.67	27,108.52	30,990.04	51,692.04	34,560.95	27,180,87	324,316.22

							ON ADO	STMENT	850	### (**********************************	100	Dec	1077
parameters of the	ONLINE SECTION OF	8 P. T. S.				100	14		10,297.40	1,437.79	1.839.88	7,978.90	96,691.77
ompany		10,519.72	4.632.59	2,911.71	19,794.07	3,508.17	6,100.87	22,596.65	10,297.40	1,437.77	414.22		414.22
B	5,074.02	10,319.72	4,002.05							139.04	1.035.52	743.50	4,118.52
AMB		1,449.27	751.19							133.04	18.05	647.24	5,469.50
E			1,228.42	323.49	224.63	402.10	99.01	411.04	583.41				0.0
E	275.02	1,257.09	1,220.42							1 512 P4		148.82	12,300.2
GE		1 042 24	1,843.11	1.329.11	2,221.15	186.40	2,179.58	789.98	642.82	1,512.84			1,407.1
Œ	403.24	1,043.24	1,043.11	1,327.2							467.56	919.00	17,056.6
E	1,407.15		747.85	1,517.67	83.46	2,322.59	2,072.03	255.41	4,584.36		407.50		675.8
/ME	204.42	3,882.33	/41.63	1,327.07			675.86				3,775.23	10,437.46	138,133.9
(un. Elec.			0.000.16	6,081.98	22,323.31	6,419.26	11,127.35	24,053.08	16,107.99	3,089.67	3,113.23	10,437.40]	2001
otal	7,363.85	18,151.65	9,203.16	0,081.76	26,323.31	<u> </u>					- 001 (0.1	6 477 39	50,355.2
				0.004.04	7,297.43	1,824.14	4.821.40	1,302.11	1,051.67	5,641.17	3,951.62	5,477.38	684.1
G	3,082.73	4,664.56	8,216.10	3,024.94	250.00	219.15	215.00						0.0
KG					لان الانك	247.13							8,249-3
LG					205.00	1,622.68		169.00	305.00	258.71	218.53	50.00	2,517.0
SG	568.97		1,205.69	3,455.42	395.38	1,022.06		40.51	1,429.85				
3G	575.30	93.92	135.01	163.50	78.96	312.55		182.13	1				1,974.0
GC		95.62	70.00	1,228.71	85.00		717.12	1 3000	152.14	480.54	670.01	219.44	16,396.9
GL	1.571.62	663.38	7,964.99	401.09	3,211.45	345.12	111.12	 				96.04	1,994.
CG	26.30	181.10	1,302.94	102.56	182.96	102.51	57.25	 	720.00				1,355.
FRG	20.00	62.80			515.69		31.43	 	102.80				102.
NAG								<u> </u>	102.00				0.
						<u> </u>	<u> </u>	1 (02.75	3,761.46	6,380.42	4,840.16	5,842.86	83,629.
Mun. Gas	5.824.92	5,761.38	18,894.73	8,376.22	12,016.87	4,426.15	5,810.77	1,693.75	3,701.40	0,500	1		
Total	1,024.32	3,101.50	1						7		· · · · · · · · · · · · · · · · · · ·	3,456.00	3,456.
		1			1							3,456.00	3,456.
WATER**							l		 		 		
Total					 				1		 		2,506
		010.30	696.71		315.00	594.45	63.84	121.97	458.57		 	 	0
ATT	37.50	218.38	050.71		 					<u> </u>	-		0
AOS					<u> </u>	1					<u> </u>	 	0
COCOT			 	 	+		1					 	177
INF		 			 	 	1					 	1 0
INT	45.81	131.82	-	 	+	 				<u> </u>		+	773
ITI				6.47	696.84	1	1	70.4			/00 00	+	6,600
LDC							97.7	9	526.08	546.01			30,418
MCI	1,690.67			954.88				1 1,535.3	3 833.45				
NYNEX	2,361.0	7,114.29								904.88	3	62.64	379
OTT	154.3	7	32.53	223.37	9.1	252.0			127.72				
PILGRIM	1			<u> </u>			' 		2.93		<u> </u>		24
SPR	 				237.9	<u> </u>							110
ZERO+	69.7	5	46.31			1 (000	7 2,153.2	24 1.778.3	2,232.75	2,356.2	5 1,061.1	913.4	43,37
Total	4,359.1		4 4,767.50	5,702.9	3,496.1	4 6,683.9	2,133.	2,770		 			
1000	1,,,,,,,,,						10.001	36 27,525.	15 22,102.20	11,826.3	4 9,676.5	0 20,649.79	268,59
	17,547.8	8 31.785.6	7 32,865.39	20,161.1	8 37,836.3	2 17.529.3	8 19,091.	30 L/,343.	الماساد وسد ال				

CONSUMER DIVISION ADJUSTMENTS - 1995

					CONSU	MER DI	VISION	ADJUS	IMENI	O.	Kuri	0.4	# (C) (A)
and 10 cm (10 00 00 00 00 00 00 00 00 00 00 00 00 0	· MANAGEMENT TO PROCEED S	(a)	Man		Mag		J#	7.05	30.777.05	41,263.98		16,165.89	
COMPAND.			20,937.03		14,325.40	11,434.76	7,929.21	22,327.41	18,766.96	41,20012			821.01
BE	3,957.84	5,043.08		2,20						1 620 66			5,207.12
CAMB			821.01	41.35	960.21	398.93		18.84		1,620.55	166.75	160.61	3,788.82
CE	1,507.84	403.75		41.33	45.98		289.15	2,523.64	101.10		100.73	100.00	0.00
BE	263.31		238.28		43.90							2,743.90	25,921.27
FGE					0.007.03	3,544.29	696.07	977.16	1,664.87	1,305.18	2,010.90	2,143.90	0.00
мв	7,805.99	1,478.29	175.13	1,122.46	2,397.03	3,344.22						41.00	
NE						151.03	662.38	859.37	435.44	1,558.95	1,285.31	41.20	0,001.44
WME	933.78	319.10	328.00	226.88	<u> </u>	131.03	000.00				1 4 642 10	701.46	74,799.59
					T == 250 12	7 589 97	1.066.82	3,734.09	3,667.79	9,683.54	4,543.19	702.40	2 700 04

			220.00									
933.78	319.10							2 ((7 70	0 683 54	4.543.19	701.46	74,799.59
	0.000.00	4 635 M	13 664.51	20,259.13	7,588.87	1,066.82	3,734.09	3,667.79				7,709.04
2,186.27	3,008.88		15/100 110 -		6,206.36				101.33			0.00
 		0.00							241 27	1.864.93	1,199.36	16,170.25
		1 106 05	2 001 55	1,939,47	2,621.70	1,250.53						8,720.22
					111.33	653.13				4,500.15		1,695.24
					233.66	308.60	60.00				167.78	6,850.62
35.00	144.00	18.19			460.51	25.00	104.42	1,538.46	1,515.11			582.33
697.78					288.85							426.13
	169.23		124.23	-			426.13		705.00			701.06
			318 07	 	 	32.00			325.09		L	
25.00		L	310.97						T - 100 06	T	1	5,824.06
	933.78 2,186.27 950.62 1,312.88 35.00 697.78	950.62 1,559.64 1,312.88 540.86 35.00 144.00 697.78	2,186.27 3,068.88 4,635.04 0.66	2,186.27 3,068.88 4,635.04 13,664.51 0.66	2,186.27 3,068.88 4,635.04 13,664.51 20,259.13 0.66 1,400.47	2,186.27 3,068.88 4,635.04 13,664.51 20,259.13 7,588.87 950.62 1,559.64 1,126.05 2,001.55 1,939.47 2,621.70 1,312.88 540.86 50.00 183.50 387.09 111.33 35.00 144.00 18.19 300.00 233.66 697.78 1,176.31 1,165.25 460.51 169.23 124.25 288.85	2,186.27 3,068.88 4,635.04 13,664.51 20,259.13 7,588.87 1,066.82 950.62 1,559.64 1,126.05 2,001.55 1,939.47 2,621.70 1,250.53 1,312.88 540.86 50.00 183.50 387.09 111.33 653.13 35.00 144.00 18.19 300.00 233.66 308.60 697.78 1,176.31 1,165.25 460.51 25.00 318.97 32.00	2,186.27 3,068.88 4,635.04 13,664.51 20,259.13 7,588.87 1,066.82 3,734.09 950.62 1,559.64 1,126.05 2,001.55 1,939.47 2,621.70 1,250.53 1,349.03 1,312.88 540.86 50.00 183.50 387.09 111.33 653.13 63.95 35.00 144.00 18.19 300.00 233.66 308.60 60.00 697.78 1,176.31 1,165.25 460.51 25.00 104.42 169.23 124.25 288.85 32.00 426.13	2,186.27 3,068.88 4,635.04 13,664.51 20,259.13 7,588.87 1,066.82 3,734.09 3,667.79 950.62 1,559.64 1,126.05 2,001.55 1,939.47 2,621.70 1,250.53 1,349.03 66.00 1,312.88 540.86 50.00 183.50 387.09 111.33 653.13 633.95 286.69 35.00 144.00 18.19 300.00 233.66 308.60 60.00 413.79 697.78 1,176.31 1,165.25 460.51 25.00 104.42 1,538.46 25.00 318.97 32.00 32.00 32.00 32.00	2,186.27 3,068.88 4,635.04 13,664.51 20,259.13 7,588.87 1,066.82 3,734.09 3,667.79 9,683.54 950.62 1,559.64 1,126.05 2,001.55 1,939.47 2,621.70 1,250.53 1,349.03 66.00 241.37 1,312.88 540.86 50.00 183.50 387.09 111.33 653.13 63.95 286.69 164.00 35.00 144.00 18.19 300.00 233.66 308.60 60.00 413.79 182.00 697.78 1,176.31 1,165.25 460.51 25.00 104.42 1,538.46 1,515.11 25.00 318.97 32.00 32.00 325.09	2,186.27 3,068.88 4,635.04 13,664.51 20,259.13 7,588.87 1,066.82 3,734.09 3,667.79 9,683.54 4,543.19 950.62 1,559.64 1,126.05 2,001.55 1,939.47 2,621.70 1,250.53 1,349.03 66.00 241.37 1,864.93 1,312.88 540.86 50.00 183.50 387.09 111.33 653.13 63.95 286.69 164.00 4,966.79 35.00 144.00 18.19 300.00 233.66 308.60 60.00 413.79 182.00 697.78 1,176.31 1,165.25 460.51 25.00 104.42 1,538.46 1,515.11 25.00 318.97 32.00 32.00 325.09	2,186.27 3,068.88 4,635.04 13,664.51 20,259.13 7,588.87 1,066.82 3,734.09 3,667.79 9,683.54 4,543.19 701.46 950.62 1,559.64 1,126.05 2,001.55 1,939.47 2,621.70 1,250.53 1,349.03 66.00 241.37 1,864.93 1,199.36 1,312.88 540.86 50.00 183.50 387.09 111.33 653.13 63.95 286.69 164.00 4,966.79 35.00 144.00 18.19 300.00 233.66 308.60 60.00 413.79 182.00 697.78 1,176.31 1,165.25 460.51 25.00 104.42 1,538.46 1,515.11 167.78 25.00 318.97 32.00 32.00 325.09 325.09 325.09

TOTAL	41,557.80	21,410.30	33,272.62	26,454.28	45,471.45	30,303.37	1 ,				7 66 I avne C		
ZERO+					45 477 45	36,365.39	19,902.13	40,966.38	36,186.99	70,404.87	49,120.47	24,182.49	422,252.
SPR					47,39			12.90					
OTT	910.94	442.79	54.96		47.39		3.00	117.24				15.77	28.
NYNEX	19,126.63	3,916.25	2,411.80	U10.73	60.39	270.15		924.07	603.30	1,224.00	207.20		167
MCI	 	3,764.76			876.03	593.23	5,325.20	3,891.11	6,206.66	6,121.82	209.28	122.90	4,822
LDC			146.56	405.94			534.45	2,186.05	42.85		2,162.79	1,194.88	29,632
<u> </u>	 	1.11	123.89	2,146.06	15.96	51.71				1,453.22	251.49	373.56	9,158.
NT	 	8.00							168.32	129.60		141.54	2,778.
NF						449.49							8.
COCOT							63.19			181.63	93.60	162.00	886.
													<u> </u>
os		19.51				47.89	0.75						0.
TT	1,784.72	531.05	875.93	1,905.95	1,291.65		302.10	17.59			480.08		
ATER**	59.20					1,912.63	582.13	1,293.38	1,120.39	40.20	356.06	991.64	565.0
UNI *			1,074.44	32.67				80.00		161.02			12,685.
							480.52		1,104.37	3,132.06			300.2
RG	25.00												5,824.0

*Muni = March - West Boylston

OCT. Adj for BECO -87.66 Layne case

April - South Hadley

July - Merrimac

Sept. - North Attleboro

Oct. - Chicopee = 296.50 - Norwood = 39.68

- Reading = 2,714.88

- Taunton = 108.00

**Water = Jan. - Mass. American Water

August - Barnstable Water Supply Oct. - Mass. American Water

08/31/1999

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CONSUMER DIVISION ADJUSTMENTS - 1994

					CONSO	MEK DI	ATOTOL		*************	64	Blog		TOTAL
	Jan	191	100			Jui	Jo		16 116 01	23,093.85	6,832.49	3,225.91	173,837.35
Company E	13,862.44	6,264.66	4,788.69	5,554.42	11,524.73	37,382.10	2,926.87	42,264.28	16,116.91	23,093.03	0,002.11		0.00
AMB	13,802.77	0,20						15.36		1,491.24	327.85	268.96	7,448.72
CE		1,762.03	607.69	775.24	289.46	545.08	1,365.81	15.36	904.71	1,472.01		362.07	1,770.10
EE		503.32							904.71				2,507.06
FGE			1,500.00				1,007.06	0.541.07	4,107.73	5,277.18	3.014.89	2,758.10	36,915.19
ME	861.87	785.62	700.34	3,136.80	638.28	5,171.99	7,920.52	2,541.87	4,107.73	3,211.00			0.00
NE	1						200 03	514.60	1,224.88	614.39	402.12	353.62	5,825.75
WME	730.38			367.61	725.32	<u> </u>	892.83	314.00	1,224.00	L			

AA TATE	1,00.00												
							10 400 73	30,209.39	18,581.95	4,569.69	17,667.83	7,762.63	279,527.12
200	7,386.44	18,031.67	20,939.93	90,238.26	15,093.28	38,555.32	10,490.73	30,203.33	10,552.55	162.05			7,349.19
BG	-	105.98	206.10			493.73	321.00			102.03			0.00
BKG	6,060.33	103.96	200.10				_		l				25,382.15
BLG					1015 11	722.33	1,200.95	1,387.59	5,583.72	1,858.92	288.12	1,382.77	
BSG	1,552.87	3,052.50	1,604.40	5,532.87	1,215.11		165.23	256.53	2,288.34		1,662.25	869.08	8,363.22
CG	59.15	283.74	278.17	296.32	1,557.83	646.58			S LOUIS !		99.01	147.01	704.48
	37.22	76.62				298.12	13.00	70.72	ļ		194.46	929.85	4,505.57
CGC		70.02		 	2.099.53	706.80		153.54			194.40	727.00	713.47
CGL	69.06		352.33										
BCG	607.59		93.88	<u> </u>	12.00		 						0.00
NAG	1			1				 		354.46	776.39		3,162.22
	+	328.00			1	1,400.54			<u> </u>	334.40	.,,,,,,,		
FRG	302.83	328.00											

			_						300.00	3.99	73.28		1,985.22
MUNIC *			1,563.83			44.12			300.00				571.14
WATER		411.26		95.42		13.49	50.97	0.000.63	1,554.17	2,259.12	1,623.35	1,844.87	22,788.45
NYNEX	433.52	244.93	922.75	1,245.26	857.22	7,544.48	1,270.15	2,988.63	421.92	9,623.14	434.73	554.56	30,167.42
	3,537.43	2,808.30	1,062.98	682.87	1,208.79	8,422.71	161.81	1,248.18		44.21	243.36	180.14	1,415.69
ATT	3,337.43	2,000.00				280.26	35.03	557.09	75.60	777.60	2,070.52	141.18	5,746.64
OTH	220.45		2.22	241.00	353.02	312.95	389.70		1,238.00	777.00	2,010.32		82.50
MCI				82.50									2.25
NYNEX-YPA				0.25			2.00				639.44	6,958.64	8,016.77
COCOT			219.76			34.48	164.45					0,530.01	87.27
LDC			9.05			73.55					4.67		34.01
AOS			7.03		16.00			18.01			100.04	£10.73	1,256.64
PILGRIM			25.00				52.24	189.03			103.34	518.73	4,657.29
INT	247.10	51.20	95.00			482.96	1,179.06	591.15	1,616.96	787.16		10.04	4,037.23
INF							384.33					18.34	
TTI					 					154.00			154.00
VRS					ļ		2.91			29.93			32.84
ZEROPLUS					116.60			†					913.99
MISC		60.70	27.03	709.57	116.69 35,707.26	103,131.59	29,996.65	83,005.97	54,014.89	51,100.93	36,458.10	28,276.46	636,326.38
TOTAL	35,931.46	34,770.53	34,974.15	108,958.39	35,701.20	1 200,202.05							

Municipals:

MARCH- Chicopee \$ 65.00 SEPT.- Belmont \$ 300.00 Peabody \$1,498.83 OCT.- Wellesley\$ 3.99 NOV.- Chicopee \$ 73.28

Γ	Jan	uary	Febr	ruary	Ma	rch	Ap	ril	M	ay	Ju	ne
	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls
00.45 Minutes	39	43.33%	26	44.07%	28	41.18%	20	25.32%	24	40.00%	33	49.25%
00-15 Minutes	37	41.11%	18	30.51%	21	30.88%	41	51.90%	19	31.67%	18	26.87%
16-30 Minutes		8.89%	9	15.25%	15	22.06%	14	17.72%	13	21.67%	11	16.42%
31-45 Minutes	8	5.56%		6.78%	4	5.88%	3	3.80%	2	3.33%	5	7.46%
46-60 Minutes	5		2	3.39%	0	0.00%	1	1,27%	2	3.33%	0	0.00%
Over 60 Minutes	1	1.11%			68	100.00%	79	100.00%	60	100.00%	67	100.00%
Total % of Calls < 60 Minutes	90	100.00% 99%	59	97%	06	100.00%		99%		97%		100%

ľ					Sonte	mber	Octo	ober	Nove	mber	Dece	mber	Ann	ual
	J u # Calls	W Calls	# Calls	ust % Calls	# Calls	% Calls		,						
20.45.80	# Calls	47.54%	31	39.74%	26	35.14%	34	39.08%	35	40.23%	44	41.51%	369	40.28%
00-15 Minutes			31	39.74%	26	35.14%	34	39.08%	35	40.23%	39	36.79%	341	37.23%
16-30 Minutes	22	36.07%		16.67%	16	21.62%	17	19.54%	11	12.64%	16	15.09%	149	16.27%
31-45 Minutes	6	9.84%	13		- 10	6.76%		2.30%	6	6.90%	6	5.66%	46	5.02%
46-60 Minutes	3	4.92%	1	1.28%	3	1.35%	0	0.00%	0	0.00%	1	0.94%	11	1.20%
Over 60 Minutes	11	1.64%	2	2.56%				100.00%	87	100.00%	106	100.00%	916	100.00%
Total	61	100.00%	78	100.00%	74	100.00%	87		- 07	100.00%		99%		99%
% of Calls < 60 Minutes		98%		97%		99%		100%	L	100%		3370		

ſ	Jan	uan/	Febr	uary	Ma	rch	Ap	ril	M	ay	Ju	ne
	# Calls	% Calls	# Calls	% Cails	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls
	38	58.46%	38	57.58%	56	62.22%	47	54.65%	38	60.32%	28	43.08%
00-15 Minutes			20	30.30%	26	28.89%	29	33.72%	15	23.81%	23	35.38%
16-30 Minutes	19	29.23%		9.09%	7	7.78%	7	8.14%	9	14.29%	8	12.31%
31-45 Minutes	5	7.69%	6			1.11%		2.33%	1	1.59%	5	7.69%
46-60 Minutes	2	3.08%	1	1.52%		-		1.16%	0	0.00%	1	1.54%
Over 60 Minutes	1	1.54%	1	1.52%	0	0.00%	- 1		63	100.00%	65	100.00%
Total	65	100.00%	66	100.00%	90	100.00%	86	100.00%	03	 		98%
% of Calls < 60 Minutes		98%		98%		100%		99%		100%		30 /6

;	Ju	ulv T	Διισ	ust	Septe	mber	Octo	ber	Nove	mber	Dece	mber	Ann	ual
	# Calls	% Calls												
	32	47.76%	32	42.11%	22	30.56%	30	32.26%	30	34.88%	35	34.65%	426	
00-15 Minutes				40.79%	25	34.72%	43	46.24%	34	39.53%	41	40.59%	326	35.05%
16-30 Minutes	20	29.85%	31			29.17%	16	17.20%	14	16.28%	24	23.76%	137	14.73%
31-45 Minutes	11	16.42%	9	11.84%	21		- 10		5	5.81%	1	0.99%	27	2.90%
46-60 Minutes	2	2.99%	3	3.95%	1	1.39%		3.23%	3			0.00%	14	1.51%
Over 60 Minutes	2	2.99%	1	1.32%	3	4.17%	11	1.08%	3	3.49%	- 121		930	
Total	67	100.00%	76	100.00%	72	100.00%	93	100.00%	86	100.00%	101	100.00%	930	
% of Calls < 60 Minutes		97%		99%		96%		99%		97%		100%		98%

Г	lan	uary	Febr	uary	Ma	rch	Ap	ril	M	ay	Ju	ne
	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls
	40	63.49%	45	63.38%	46	63.01%	41	69.49%	46	65.71%	56	70.89%
00-15 Minutes			18	25.35%	24	32.88%	17	28.81%	14	20.00%	15	18.99%
16-30 Minutes	<u>17</u>	26.98%	7	9.86%	3	4.11%	1	1.69%	10	14.29%	6	7.59%
31-45 Minutes	5	7.94%				0.00%	<u> </u>	0.00%	0	0.00%	2	2.53%
46-60 Minutes	1	1.59%	1	1.41%	0	+		0.00%	0	0.00%	0	0.00%
Over 60 Minutes	0	0.00%	0	0.00%	0	0.00%	U				79	100.00%
Total	63	100.00%	71	100.00%	73	100.00%	59	100.00%	70	100.00%		
% of Calls < 60 Minutes		100%		100%		100%		100%		100%		100%

•	Ju	ılv	Auc	ust	Septe	mber	Octo	ber	Nove	mber	Dece	mber	Ann	ual
·	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls		
20.45.16:	30	60.00%	62	65.96%	49	53.26%	40	39.22%	43	53.75%	44	61.11%	542	59.89%
00-15 Minutes			20	21.28%	31	33.70%	29	28.43%	25	31.25%	12	16.67%	237	26.19%
16-30 Minutes	15	30.00%	20			11.96%	16	15.69%	9	11.25%	13	18.06%	94	10.39%
31-45 Minutes	2	4.00%	11	11.70%	11				1	1.25%	3	4.17%	23	2.54%
46-60 Minutes	2	4.00%	. 1	1.06%	0	0.00%	12	11.76%						0.99%
Over 60 Minutes	1	2.00%	0	0.00%	1	1.09%	5	4.90%	2	2.50%	0	0.00%	9	
	50	100.00%	94	100.00%	92	100.00%	102	100.00%	80	100.00%	72	100.00%	905	100.00%
Total % of Calls < 60 Minutes		98%	<u> </u>	100%		99%		95%		98%		100%		99%

[.lan	uary	Febr	uary	Ma	rch	Ar	oril	M	ay	Jı	ine
	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls
00-15 Minutes	15	46.88%	15	51.72%	17	50.00%	17	68.00%	21	67.74%	6	50.00%
	12	37.50%	12	41.38%	13	38.24%	. 5	20.00%	9	29.03%	3	25.00%
16-30 Minutes	2	9.38%	1	3,45%	1	2.94%	3	12.00%	1	3.23%	2	16.67%
31-45 Minutes	3	3.13%	1	3.45%	2	5.88%	0	0.00%	0	0.00%	1	8.33%
46-60 Minutes		3.13%		0.00%	1	2.94%	0	0.00%	0	0.00%	0	0.00%
Over 60 Minutes	1		20	100.00%	34	100.00%	25	100.00%	31	100.00%	12	100.00%
Total % of Calls < 60 Minutes	32	100.00% 97%	29	100.00%	34	97%		100%		100%		100%

ſ	.lı	ıly	Aug	ust	Septe	ember	Oct	ober	Nove	mber	Dece	mber	Ann	ual
	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls		
00-15 Minutes	14	51.85%	20	57.14%	58	69.05%	56	54.37%	51	64.56%	54	63.53%	344	59.72%
	- 17	29.63%	11	31.43%	18	21.43%	30	29.13%	13	16.46%	21	24.71%	155	26.91%
16-30 Minutes		14.81%	11	11.43%	5	5.95%	11	10.68%	11	13.92%	7	8.24%	53	9.20%
31-45 Minutes	4	3.70%	0	0.00%	3	3.57%	5	4.85%	2	2.53%	1	1.18%	17	2.95%
46-60 Minutes	<u> </u>	0.00%		0.00%	0	0.00%	1	0.97%	2	2.53%	2	2.35%	7	1.22%
Over 60 Minutes	07		35	100.00%	84	100.00%	103	100.00%	79	100.00%	85	100.00%	576	100.00%
% of Calls < 60 Minutes	27	100.00%	35	100%	04	100%		99%		97%		98%		99%

Г	lan	uary	Febr	ruary	Ma	March		April		May		June	
	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	
00.45 Minutes	17	48.57%	21	52.50%	14	41.18%	18	47.37%	15	53.57%	6	28.57%	
00-15 Minutes	7	20.00%	14	35.00%	8	23.53%	15	39.47%	8	28.57%	10	47.62%	
16-30 Minutes				10.00%	6	17.65%	5	13.16%	4	14.29%	2	9.52%	
31-45 Minutes		20.00%		2.50%	1	2.94%	0	0.00%	0	0.00%	3	14.29%	
46-60 Minutes	2	5.71%				14.71%	0	0.00%	1	3.57%	0	0.00%	
Over 60 Minutes	2	5.71%	<u> </u>	0.00%	34	100.00%	38	100.00%	28	100.00%	21	100.00%	
Total % of Calls < 60 Minutes	35	100.00% 94%	40	100.00%	34	85%	36	100.00%	20	96%		100%	

Г		uly	Auc	gust	Septe	ember	Oct	ober	Nove	mber	Dece	mber	Ann	ual
	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls	# Calls	% Calls		
00.45 Minutes	# Oali3	40.91%	4	30.77%	7	43.75%	13	33.33%	28	66.67%	20	58.82%	172	47.51%
00-15 Minutes	40	45.45%		38.46%	6	37.50%	13	33.33%	9	21.43%	11	32.35%	116	32.04%
16-30 Minutes	10		2	23.08%		12.50%	8	20.51%	3	7.14%	2	5.88%	49	13.54%
31-45 Minutes	3	13.64%	3			6.25%	1	2.56%	1	2.38%	1	2.94%	11	3.04%
46-60 Minutes	0	0.00%	0	0.00%	<u> </u>		1	10.26%	1	2.38%	0	0.00%	14	3.87%
Over 60 Minutes	0	0.00%	1	7.69%	0	0.00%	4		12	100.00%	34	100.00%	362	100.00%
Total	22	100.00%	13	100.00%	16	100.00%	39	100.00%	42		34	 		96%
% of Calls < 60 Minutes		100%		92%		100%		90%		98%		100%		30 /6

Lost Work Time Accident Rate: 1993 - 2002

Incident Rate = (N/EH) x 200,000
where,

N = number of lost work time injuries and illnesses, including cases
involving days away from work or days of restricted work activity or both

EH = total hours worked by all employees during the calendar year

200000 = base for 100 equivalent full-time workers (working 40 hours per week,
50 weeks per year).

Year	Number of Hours	Number of	Lost Time
	Worked by All	Lost Time	Incident
	FG&E Employees	Accidents(1)	Rate
2002	196,928	1	1.02
2001	191,108	7	7.33
2000	188,108	7	7.44
1999	190,823	7	7.34
1998	202,883	12	11.83
1997	222,057	11	9.91
1996	243,074	17	13.99
1995	250,451	16	12.78
1994	257,552	14	10.87
1993	248,858	17	13.66

⁽¹⁾ Lost time accidents are for both FG&E's electric and gas divisions.

Staffing Levels: 1997 – 2002

	Staffing
Year	Level*
2002	86
2001	85
2000	83
1999	83
1998	83
1997	102

*For the period 1996 through 2001, staffing level refers to the number of employees on payroll at the end of the year. Commencing with 2002, staffing level refers to the number of staff positions which includes the number of employees on payroll plus open positions.

Consistent with the Department's directive in its Letter Order to Bay State Gas, FG&E is providing its staffing level data for informational purposes. <u>Bay State Gas Co.</u>, D.T.E. 99-84 (May 28, 2002) ("Bay State Order"). G.L. c. 164 requires present staffing levels of a distribution company to be tied to a company's November 1, 1997 levels only when it operates under a performance-based rate ("PBR") plan. Since FG&E is not yet operating under a PBR plan, no staffing level benchmark for FG&E is required. However, the Department has determined that there is value in distribution companies reporting their staffing levels for informational purposes, as compared to November 1997, on an annual basis.

In November of 1997, FG&E had 102 employees. As of December 2002, FG&E has 86 employees. The reduction is predominantly the result of two separate reassignments of FG&E employees to Unitil Service Corp. First, as FG&E discussed in its recent rate proceedings, in April of 1998, all customer service center activities were centralized in Unitil's Concord, New Hampshire facility where, as a result of the consolidation, FG&E's customers now receive 24/7 customer assistance from live customer service representatives. In addition, a bilingual representative is available to communicate with FG&E's spanish-speaking customers. The centralization resulted in a shift of approximately 11 positions from FG&E to Unitil Service Corp. Second, in April of 1998, five FG&E engineering personnel were transferred to Unitil Service Corp.'s Engineering Department resulting in centralization of the system's engineering function, streamlining of operations, and improvements in service quality and reliability.

FG&E believes that since employees can be transferred between the Unitil system subsidiaries (with the work they perform continuing to inure to the benefit of FG&E), it is important to review staffing levels on a total system basis. <u>See, accord</u>, Joint Comments of Massachusetts Elec. Co., Nantucket Elec. Co. and Eastern Edison Co., D.T.E. 99-84 (Dec. 3, 1999).

Restricted Work Day Rate: 2002

Incident Rate = (N/EH) x 200,000
where,

N = number of cases of lost work time injuries and illnesses involving days
of restricted work activity only

EH = total hours worked by all employees during the calendar year

200000 =base for 100 equivalent full-time workers (working 40 hours per week,
50 weeks per year).

Restricted Work Day Rate for 2002 = 0

N = 0EH = 196,928

Note: The Restricted Work Day Rate is a subset of, and is included within the Lost Work Time Accident Rate, in accordance with the Bureau of Labor Statistics definition. The Restricted Work Day Rate is for both FG&E's electric and gas divisions.

Restricted Work Day Rate: 2001

```
Incident Rate = (N/EH) x 200,000
where,

N = number of cases of lost work time injuries and illnesses involving days
of restricted work activity only

EH = total hours worked by all employees during the calendar year

200000 =base for 100 equivalent full-time workers (working 40 hours per week,
50 weeks per year).
```

Restricted Work Day Rate for 2001 = 4.19

N = 4EH = 191,108

Note: The Restricted Work Day Rate is a subset of, and is included within the Lost Work Time Accident Rate, in accordance with the Bureau of Labor Statistics definition. The Restricted Work Day Rate is for both FG&E's electric and gas divisions.

Unaccounted for Gas

For the Period January 1, 2002 through December 31, 2002

The following page provides the unaccounted for gas calculation for Fitchburg Gas and Electric Light Company, for the period January 1 through December 31, 2002. The methodology used for this calculation is consistent with the Company's Gas Allowance for Local Distribution Companies contained in FG&E's Distribution Service Terms and Conditions, M.D.T.E. 109. As defined in Section 2.0 of M.D.T.E. 109, the Company Gas Allowance is the difference between the sum of all amounts of gas received into the Company's distribution system and the sum of all amounts of gas delivered from the Company's distribution system [for the most recent twelve month period ending July 31].

Row A provides, in Dkths, the amount of gas received each month into FG&E's system. Row B provides, in Dkths, the amount of gas delivered to customers based on billed amounts. Both Row A and B include gas for FG&E's firm sales, firm transport, and interruptible customers.

Row C shows the difference, in Dkths, between the amount of gas received and the amount delivered. This difference includes, but is not limited to, gas consumed by the Company for its own purposes, system losses and gas vented and lost as a result of an event of Force Majeure, excluding gas otherwise accounted for.

Row D shows the unaccounted for gas by month and in total. For the year 2002, unaccounted for gas is 1.69%. The month-to-month fluctuations are related to cycle differences between the reading at the delivery point, which is based on calendar month, and the billing for all of FG&E's customers, which is spread throughout the month. Generally, actual losses do not vary substantially month to month.

Unaccounted for Gas for the period January 1, 2002 through December 31, 2002

Gas	Received	(Dkth)
Gas	Mecelaca	(Cruss

	Gas Receive January 2002	February 2002	March 2002	April 2002	May 2002	June 2002	July 2002	August 2002	September 2002	October 2002	November 2002	December 2002	Totals 2,807,917
Α	338,637	309,676	296,139	224,483	182,539	162,435	142,536	155,718	132,368	218,832	278,681	365,873	2,007,917
_	Gas Delivere	ed (Dkth)	229,282	217,040	242,703	166,664	146,286	144,969	156,087	155,440	233,050	339,513	2,760,401
В	408,267	321,100	223,202	217,040	2 1211 00								
	Difference (l	Dkth)					(0.750)	10.740	(23,719)	63,392	45,631	26,360	47,517
С	(69,630)	(11,424)	66,856	7,443	(60,163)	(4,229)	(3,750)	10,749	(23,719)	00,002	10,001		
	Unaccounte	d for Gas					(2.000()	0.000/	1 (47 039/)	28.97%	16.37%	7.20%	1.69%
D	(20.56%)	(3.69%)	22.58%	3.32%	(32.96%)	(2.60%)	(2.63%)	6.90%	(17 92%)	20.37 70	10.57 70	2070	

Row A: Gas made and metered at Fitchburg City Gate as recorded in the Company's Monthly Gas Workbook.

Row B: Gas delivered to customers as recorded in the Company's Monthly Accounting Report

Row C: Difference (Row A - Row B)

Row D: Unaccounted for Gas (Row C/Row A)

Unaccounted for Gas for the period January 1, 2001 through December 31, 2001

_	_	_			
Gas		20 ivr	പെ	nu	·hì
Gas	REI	LUIV	cu i	URI	

January 2001	February 2001	March 2001	April 2001	May 2001	June 2001	July 2001	August 2001	September 2001	October 2001	November 2001	December 2001	Totals
420,558	358,189	337,383	193,622	104,726	83,874	79,960	77,039	107,133	169,151	215,345	303,913	2,450,893
Gas Delive	red (Dkth)											
456,089	375,028	349,250	250,873	131,041	93,096	74,804	71,251	86,940	133,037	185,422	230,283	2,437,115
	1 0,0,0=0 1	0,0,200	,	, , , , , , , ,	, 1	, .	, , , , , , , , , , , , , , , , , , ,					
100,000	0.0,020	0.10,200		1 ,0 ,14		,	· · · · · · · · · · · · · · · · · · ·					
Difference	<u> </u>	0 10,200	200,0.0			5,156	5,789	20.193	36,113	29,923	73,630	13,778

Row A: Gas made and metered at Fitchburg City Gate as recorded in the Company's Monthly Gas Workbook.

Row B: Gas delivered to customers as recorded in the Company's Monthly Accounting Report

Row C: Difference (Row A - Row B)

Row D: Unaccounted for Gas (Row C/Row A)

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY

2002 - GAS

	DESCRIPTION, LOCATION AND SCOPE OF PROJECT*	TOTAL AMOUNT EXPENDED
	GAS DISTRIBUTION SYSTEM IMPROVEMENTS (throughout system), Normal additions,	\$918,204.77
	replacements, improvements of gas distribution systems for 2002, including upgrade and	
	strengthen gas main (all associated materials, sand gravel, paving and trucking of soils), plus	:
	additional cost associated with replacement and improvements to gas mains and services	
1	required under 49 CFR 192	
	NEW GAS SERVICES, for new service installations throughout the gas distribution system	\$200,508.55
2	during 2002, less customer contributions.	
	CORROSION CONTROL, (throughout system) cost of adding cathodic protection to low	\$124,523.10
	pressure steel mains. Under 49CFR 192.455, all pipelines installed after 7/31/71 must be	
3	cathodically protected.	
F	ABANDON GAS SERVICES (throughout system) during 2002, completed in accordance with	\$82,215.80
ļ	federal requirements under CFR Title 49 (49 CFR 192.727) and the Code of Massachusetts	
	Regulations (220 CMR 107.00), and the unanticipated additional cost associated with	
ļ	increased building demolition and the abandonment of service stubs during leak	
	investigations. Gas distribution procedures mandate that service stubs be abandoned in	
4	accordance with state and federal code.	
\vdash	GAS METER PURCHASES AND INSTALLATIONS (throughout system), for material and	\$132,833.06
F	supplies for customer and company requirements in 2002, and installation costs.	
<u> </u>	ANNUAL CAST IRON MAIN REPLACEMENT PROGRAM includes the abandonment of	\$1,326,287.25
	10,560 feet of cast iron main and was replaced with HDPE main. Locations included	
	Chestnut Street, Gardner, Ashburnham Street, Blossom Street, Milk Street, Winch Street,	
1 6	Cleghorn Street and Canton Street, Fitchburg.	
一	ANNUAL JOINT ENCAPSULATION/ANAEROBIC SEALING - FITCHBURG AND GARDNER,	\$152,863.86
	to encapsulate approximately 130 multiple cast iron joint leaks, based on leak survey	
١.	information as well as other sources.	
-	REPLACE EXPANSION JOINT RT2A WESTMINSTER, bellows style expansion joints on the	\$123,709.56
	6" high-pressure steel main were found to be deformed and were replaced during summer	
Ι.	A Company of the control of the cont	
H	BARE STEEL REPLACEMENT CHESTNUT STREET GARDNER replaced 2,200 feet of 4"	\$177,639.29
	bare steel main and five gas services that was found to be deteriorating. Main failed to meet	
	the minimum remaining thickness required by 49CFR Part 192.487. The pipeline was	
	discovered to be at insufficient depth to meet 49CFR 192.327 requirements.	<u> </u>
-	MAIN EXTENSION ON NORTH STREET FITCHBURG, extend the 4" HDPE high pressure	\$55,038.74
	main with 8" HDPE 1,000' from Green Street to Pearl Street. This section of North Street was	
1	presently undergoing complete reconstruction and the extension would reinforce the integrity	
1	of the system and also allowed Business Development the opportunity to increase load in the	
\mathbb{L}^{1}	0 area, specifically Fitchburg State College.	<u> </u>

^{*}FG&E has defined major capital expenditures to be those in excess of \$50,000. Data for prior years was included in FG&E's 1st Annual Report.



Operations Bulletin

#OP9.00

SUBJECT: Critical Spares Policy (Gas)

EFFECTIVE: 03/15/2002

ISSUED BY: G. Appleton CONTENT BY: R Bisson

1.0 PURPOSE

This bulletin establishes the requirements for inventorying critical spare parts and components for in-service energy delivery equipment. Specifically, this bulletin establishes the criteria and conditions for carrying an inventory of spare parts that would be deemed critical.

2.0 SPARE PARTS CLASSIFICATION & DEFINITION

Spare parts are classified as either Critical Spares or Non-Critical Spares.

Critical Spares

Critical spares are defined as inventoried parts that are immediately available as replacements for failed components. Critical spares are inventoried for only those components that if failed would result in service interruption to customers or diminished use or availability of the energy distribution system. Specifically, the component failure would cause the loss of service to customers, the loss of equipment use, the loss of a system's availability, or result in the energy delivery system to be operated in a sub-optimal first contingency basis until the component or affected equipment is replaced or repaired.

A sub-optimal first contingency basis means operating the energy delivery system:

 When there is an increased outage exposure to a significant number of additional customers. It is the company's intention to minimize the time that the energy delivery system is operated in such a configured manner. Accordingly parts and components that require inventorying in order to minimize this manner of operation are classified as critical spares.

Non-Critical Spares

Non-critical spares are defined as inventoried parts that are available as replacements for in-service components. Non-critical spares, if failed, would result in operating the system on a first contingency basis where the affected equipment or system is not available but does not significantly increase outage exposure to additional customers. Additionally, the loss of the equipment or the system availability would be for a short period of time and does not result in operating the system on a sub-optimal basis. Included in this classification are consumable supplies used to perform periodic, routine maintenance, and are generally not returned to the stockroom. Such items include cleaning solvents, lubricants, and temperature control and actuating fluids and general use hardware.

It is not the intent of this policy to establish guidelines for identifying and inventorying non-critical spare parts.

3.0 REQUIREMENTS FOR CRITICAL SPARES

All critical spares, regardless of cost, shall meet the following requirements:

- The spare part shall meet the classification definition in Sec 2.0, above.
- The spare part shall be used to replace a component that is unique to the equipment and essential to the equipment operation.
- The failure of the essential component must render the equipment or system inoperable and force its removal from service.
- No other part, component or subsystem exists as a functional or economically viable substitute for the part.

Certain spare parts may be multi-functional or may be viable replacement components for a large number and variety of equipment or systems. Critical spares that meet component replacement requirements for multiple systems and equipment shall be stocked in preference to sole function critical spare parts.

It is recognized that items used in the course of routine or planned construction may be used to replace parts that have failed and rendered equipment or a system inoperable. Such items are usually stocked in quantities sufficient to meet both emergency and planned work requirements. These items shall not be classified as critical spares. In the event that emergency use of such items exceeds planned use, a re-evaluation of the stock classification for the item will be made.

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Critical spares will only be used when a component failure occurs. Critical spares shall not be used for planned maintenance or planned construction work. In most instances, there is a high probability that a critical spare will not be needed or used during the operational lifetime of the equipment or the system. In the relatively rare event that a piece of equipment or system experiences a failed component resulting in the permanent use of a critical spare, an order shall be issued to obtain a replacement critical spare part to be placed in inventory.

4.0 CRITICAL SPARE STOCKING METHODOLOGY

The decision to stock at least one unit of a given type of a critical spare shall be determined using an equipment and service availability criteria and a system impact criteria. The on-hand quantity for a specific critical spare component shall be determined using an inventory control model criteria. The inventory control model establishes the critical spare stocking levels assuming an exponential distribution of failure free operating time, an exponential distribution of re-supply lead time, the quantity of in-service parts deemed to be classified as critical and an inventoried part availability service level of 95%.

Equipment Availability Impact Criteria

The reliability of the energy delivery system is dependent upon the availability of the equipment, systems and components that make up the system. Equipment, lines and systems are not available for service when a component or part has failed. Determining a component failure rate is necessary for determining stocking levels for critical spares.

Failure Rate:

The identification of critical spares and inventoried quantities for in-service components is based upon the premise of equipment reliability or a very high failure free operating time. Such equipment and systems must be supported with sound preventative maintenance and spare parts availability. Accurately predicting a component failure rate is required to establish a cost efficient and effective critical spare parts inventory.

The failure rate of the part can be determined from the historical performance data for the component. Analysis of equipment component failures, equipment maintenance history, equipment in-service duty and equipment in-service performance can be used to estimate a failure rate. Equipment that is new or no historical operational data is available, information regarding the component availability should be obtained from the equipment manufacturer, from other utilities, utility associations or sources. Experience with similar equipment placed into service under similar operating conditions may provide information regarding component rate failure predictability.

A failure rate must be determined and established for any in-service component or part that is to be supported by a critical spare. The failure rate is measured and quantified as

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a mean failure free operating time of the component or spare part. Operational performance records that include hours of failure free operating time shall be recorded for in-service components that are supported by a critical spare.

System Impact Criteria

The failure of critical spare parts could adversely impact system operating conditions causing service interruption to customers or diminished use or availability of the energy distribution system. Prolonged operation of the system in such a manner creates conditions that put customers at a high risk of having service interrupted. These operating conditions must be limited to minimum amounts of time. Accordingly critical spare inventories shall be established and maintained for components that may fail in service and result in the following conditions:

- loss of service to customers
- energy delivery system being operated in a sub-optimal first contingency basis

Inventory Control Model

The on-hand quantity for a specific critical spare component shall be determined using an inventory control model criteria. The inventory control model establishes the critical spare stocking levels assuming an exponential distribution of failure free operating time, an exponential distribution of re-supply lead time, the quantity of in-service parts deemed to be classified as critical and an inventoried part availability service level of 95%.

The chart shown in FIGURE 1 establishes the inventoried quantity for a specified critical spare for the designated service level of 95%. The horizontal axis indicates the calculated ratio of the mean lead-time for re-supply or acquisition of a critical spare to the failure free operating time of an in-service critical component. The mean lead-time is the duration of time between the spare part order time and spare part receipt time. The Mean failure free operating time is the period of time between failures of a specific inservice component. The vertical axis indicates the number of critical components inservice.

The inventory model calculates and graphs a stepped boundary that separates the quantity of critical spares to be inventoried based upon a calculated spare part mean lead-time to mean failure free operating time ratio for a given number of in-service components.

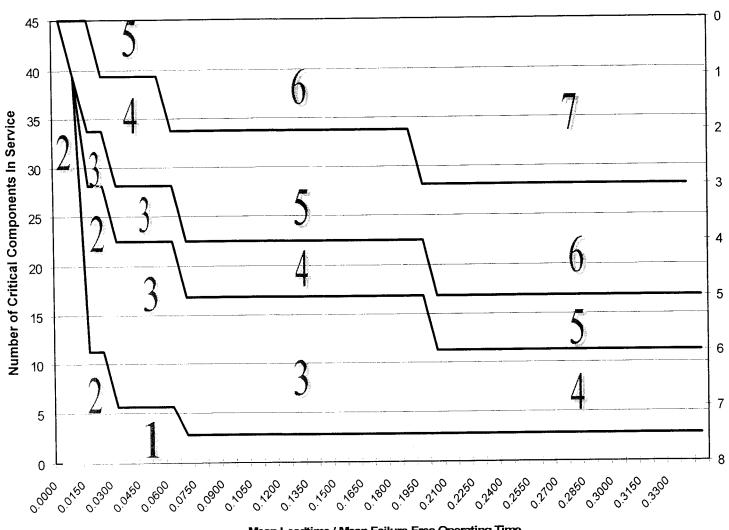
The graph further indicates that the quantity of inventoried spares changes very little over a wide range of operating parameters such as part lead-time, component failure rates and in-service component quantities. A single graph can be used to establishing stocking quantities for many critical spares.

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The graph depicts a simplified way in which to determine spare part quantities. The inventory model used to create the graph employs a complex set of calculations based upon exponential distributions around calculated means and probabilities that considered several occurring conditions. Several assumptions that were made when establishing this inventory control model. Most of the assumptions were conservative and were made to simplify the model. Assumptions

- A unit of in-service equipment utilizes critical spares in quantities of one. It is recognized that certain in-service equipment utilizes critical spares in quantities greater than one. The inventoried quantity for these critical spares must be adjusted to account for multiple component use by a single unit of equipment.
- All critical spares are acquired from a single supplier. No alternative supply of the part was considered such as an alternate supplier or borrowing the part from another utility.
- All failed components are to be discarded. No failed components were assumed to be refurbished and placed into inventory
- The model is based upon an in-service of equipment availability premise not a total down time cost premise that include transaction charges and inventory carrying charges.

Number Of Spares For A Service Level Of 95%



Mean Leadtime / Mean Failure-Free Operating Time

FIGURE 1

Customer Surveys: 2002

Customer Satisfaction - Random (Scale 1 - 7)

Response to the question: "Overall, how satisfied are you with the service you are receiving from Unitil/Fitchburg Gas & Electric?" (Scale 1 - 7: 1-Dissatsified; 7-Satisfied)

Response Value	Number of Responses	Weighted Response
1	12	12
2	8	16
3	16	48
4	19	76
5	31	155
6	34	204
7	<u>59</u>	413
Total	 179	924
Average		5.2

Customer Satisfaction - Specific (Scale 1 - 7)

Response to the question: "How satisfied were you with the service you received from our Customer Service Department?" (Scale 1 - 7: 1-Dissatsified; 7-Satisfied)

Response	Number of	Weighted
Value	<u>Responses</u>	Response
1	10	10
2	4	8
3	5	15
4	10	40
5	13	65
6	50	300
. 7	<u>125</u>	<u>875</u>
Total	217	1,313
Average		6.1

^{*}Survey changes to conform to DTE requirements implemented during 2002.